

LEXINGTON PUBLIC SCHOOLS
146 MAPLE STREET | LEXINGTON, MA | 02420
May 2021



LEXINGTON PUBLIC SCHOOLS 2020-2030 MASTER PLANNING COMPENDIUM

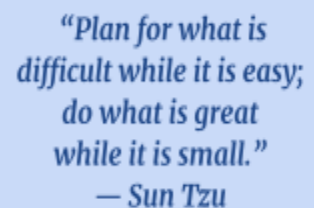
LPS MISSION: JOY IN LEARNING | CURIOSITY IN LIFE | COMPASSION IN ALL WE DO

SUPERINTENDENT'S FOREWORD

May 2021

Dear Lexington Residents:

Sun Tzu said, “Plan for what is difficult while it is easy, do what is great while it is small.” Over two and a half years ago, we brought together a group of talented and dedicated Lexington residents to address community challenges concerning the pressure on public school facilities related to rapidly increasing student enrollment. We thoughtfully planned and prioritized, and occasionally discussed how a catastrophic event like a recession could have an adverse effect on our plans and projections. In March, soon after our work was finalized, the unthinkable happened. We found ourselves in the throes of the COVID-19 pandemic, which forced us to pivot to close schools and pivot to remote teaching and learning. We were so thankful to have the better part of the master planning process behind us, and we learned that there is great wisdom in planning in good times, indeed!

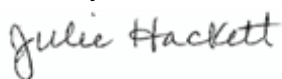


*“Plan for what is
difficult while it is easy;
do what is great
while it is small.”*
— Sun Tzu

On behalf of the School Committee and the Master Planning Advisory Committee, I am honored to share with you the LPS Master Planning Compendium (“Compendium”) that you are now reading, developed by Advisory Committee members. The Compendium is not an executive summary; it is a companion document to the more detailed and technical [facilities master plan](#) developed by DiNisco Design. It is the first of its kind in Lexington, and the plan is designed to be fluid and responsive to variations, such as how to respond to different types of fluctuations in enrollment. Special thanks goes to Lexington School Committee members past and present for their foresight in creating the Master Planning Advisory Committee and engaging the community in a planning process that prioritizes school-based capital needs.

We remain grateful to the residents of Lexington who continue to so generously invest in the Lexington Public Schools—and we recognize that our community’s resources are not without limits. We owe it to our taxpayers to help balance school priorities with municipal needs, which is a guiding principle of the Master Planning Advisory Committee. As we articulate in this compendium, our greatest challenge ahead is a new or renovated high school. We look forward to working with our municipal partners and the school community to see that project to fruition. We hope our master planning documents serve as invaluable decision-making tools that will be constantly revisited and guide our planning and space utilization efforts in the future. My heartfelt thanks goes to all the Advisory Committee members who so generously invested their time, energy, and expertise!

Sincerely,



Dr. Julie Hackett
Superintendent of Schools

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I: INTRODUCTION AND PLAN HIGHLIGHTS

The Master Planning Advisory Committee (“Advisory Committee”) engaged in thoughtful deliberation for a period of 18 months, creating a versatile and useful Master Plan that (1) serves as a decision-making roadmap; and (2) contains a repository of master planning data, including enrollment projections and space utilization analyses (See [Appendix A](#) to read more about our planning process). The Lexington Public Schools 10-Year Master Planning Compendium (“Compendium”) which you are now reading, is designed to assist decision-makers in the prioritization of future capital planning projects, large and small.

Several years ago there was no master plan sufficiently up to date to be useful in guiding decisions about capital projects. When faced with higher than anticipated enrollment pressures, no space to safely place students, and no available plan, there was no option but to hastily seek solutions to address the challenge at hand. The information presented in this Compendium and in the technical review provided by DiNisco Design is designed to ensure that all options are explored, accounting for multiple possible future scenarios. Furthermore, the master planning documents ensure that no strategy requiring capital outlay will be implemented for a particular grade span, without knowing how that particular project fits into the bigger picture. Finally, the master planning process we have implemented ensures that community members representing the local bodies that are likely to be involved, e.g., Select Board, Planning Board, Capital Expenditures Committee, Appropriation Committee, Permanent Building Committee, and Sustainable Lexington, have opportunities to weigh in on the decisions related to school projects well in advance of implementation. The plan described will serve as important decision-making roadmaps that the Town of Lexington can use to understand the possible responses to enrollment pressures.

This Compendium represents the analyses and recommendations of the Advisory Committee that are based in part on a thorough space utilization and program analysis for Lexington Public Schools produced by DiNisco Design, the architectural firm hired to advise on and develop the technical aspects of our Master Plan. The analyses of DiNisco Design, the architectural firm that assisted us with many of the technical aspects of the planning process, can be found [here](#). School enrollment projections and other input were also essential to the work of the Advisory Committee.

Key Findings

After careful analysis of the aforementioned information, the Lexington Public Schools Master Planning Advisory Committee found:

1. Lexington High School is the most critical priority in terms of LPS building projects until 2030.
2. Review of enrollment data indicates that while we focus on the high school, we do not anticipate a need for major expansions at the elementary and middle school level.

However, LPS should still have a clear set of strategies that can be used in all buildings should trends shift and overcrowding occur. These are described in Section VII, [“Strategies Prioritized By Grade Span, Enrollment Pressures and Associated Costs.”](#)

3. In anticipation of new information and acknowledgment of evolving conditions, LPS should strive for a flexible master planning process that includes ongoing review of key reports and other information relevant to capital planning decisions with decision makers.

Summary Of Key Recommendations

Given these findings, the Lexington Public Schools Master Planning Advisory Committee makes the following recommendations and comments.

- (a) MPAC review indicates that no new space is presently needed at the preschool or elementary level, nor is it likely to be needed for several years. However, elementary school enrollments must be carefully monitored for opportunities to replace aging facilities in the event of more dramatic enrollment declines or for another episode of unexpected enrollment growth.
- (b) MPAC review indicates that no new space is presently needed at the middle school level, although enrollments may stay near or just over capacity for several years. Similar to the case of elementary school enrollments, middle school enrollments should be carefully monitored.
- (c) In light of current and projected LHS enrollments being substantially higher than a reasonable estimate of the school’s capacity, **the Master Planning Advisory Committee strongly endorses the plan to increase the size of the high school facility by replacing it with a new building or by completing a comprehensive renovation with additions.**

See Section VI, [“Summary of MPAC Recommendations”](#) and Section VII, [“Strategies Prioritized By Grade Span, Enrollment Pressures, And Associated Costs”](#) for more detail on MPAC recommendations.

A Flexible, Responsive, Useful Master Plan

The ideas captured herein represent the Advisory Committee members’ best thinking given existing conditions and populations at the time of the development of the master planning documents. Given the ever-shifting nature of student enrollment trends and community conditions, the master planning process going forward includes ongoing monitoring and anticipates some revision or adaptation. To ensure that the plan is not a static document that

sits on a shelf, a framework for continual monitoring and adjustment is described in the final section of this document (Section IX, [“Next Steps And Ongoing Review”](#)).

II: WHO ARE WE AND WHAT DO WE BELIEVE?

Lexington Public Schools is a public school system located in Lexington, Massachusetts, serving approximately 6,900 students as of October 1, 2020. LPS offers robust academics, a strong commitment to the arts, and an ardent belief that our purpose and reason for existing is to instill “Joy in learning, curiosity in life, and compassion in all we do.”

In many ways, our master planning process reflects the LPS values we espouse. We integrate into the educational process eight core values that can be found in the [LPS Strategic Plan](#), including (1) we all belong; (2) use your mind; (3) be curious and have fun; (4) care for yourself and others; (5) do your part; (6) be courageous; (7) embrace your revolutionary spirit; and (8) you are enough. Our vision for the future comprises five key tenets: (1) diversity, equity, inclusion; (2) redefining success; (3) students as active agents; (4) authentic learning experiences; and (5) community partnership.

It is our deep commitment to “community partnership” that is the vision most closely reflected in our collaborative master planning process, which states in part: *“We believe that “learning is a collective endeavor that involves students, educators, families, and the community. We all join in partnership with the common goal of providing the highest quality education for our students. In doing so, we recognize that each of us represents different communities, roles, and perspectives.”* Our work on the master plan reinforces our strong belief that the diverse perspectives of many make the best plans.

Lexington continues to see changes in enrollment at all grade levels, requiring us to continuously adapt and update our plans. These changes exacerbate overcrowding and create a need for additional space, particularly at the secondary level. The School

MASTER PLANNING ADVISORY COMMITTEE MEMBERS

Daniel Abramson, Architectural Historian

Sandra Beebe, Capital Expenditures
Committee

Kathryn Colburn, School Committee

David Coelho, Assistant Superintendent for
Finance and Operations

Sara Cuthbertson, School Committee

Michael Cronin, Director of Public Facilities

Donna DiNisco, DiNisco Design

Julie Hackett, Superintendent of Schools

Charles Hornig, Planning Board
Representative

Maureen Kavanaugh, Director of Planning
and Assessments

Kathleen Lenihan, School Committee

Avon Lewis, Lexington Education
Association

Alan Levine, Appropriation Committee

Marina Levit, LPS Parent

Joe Pato, Select Board

Richard Perry, Lexington Housing
Authority

Mark Sandeen, Select Board

Dan Voss, Sustainable Lexington

NEWLY APPOINTED MEMBERS

Carissa Black, LPS Parent and Lexington
SEPAC and LexSEPTA Co-Chair

Michael Schanbacher, Architect and
Planning Board Representative

Committee determined that updating a master plan for school capital projects is necessary and prudent for this reason. They established a Master Planning Advisory Committee (“Advisory Committee”) in accordance with [School Committee Policy BDF](#).

Lexington’s master planning process began with a charge prepared by the Lexington School Committee that was approved on May 8, 2018. The School Committee developed a representative Advisory Committee structure, comprising staff and citizens with sufficient background and knowledge to understand facility assessments and the impact of facilities on the educational process. An effort to gather a broad-based group of constituents influenced the design and composition of the Advisory Committee and included the following number of representatives in each category: School Committee (2), Board of Selectmen (1), Permanent Building Committee (1), Superintendent of Schools (1), Director of Public Facilities (1), Director of Planning and Assessment (1), Capital Expenditures Committee Liaison (1), Appropriation Committee Liaison (1), Planning Board (1), the chair of the PTA/O Presidents’ Council (1), representative from SEPAC (1), high school student (1), and citizens selected through application process (2). The Advisory Committee membership has evolved over time to better meet the needs of the master planning process.

The work of the Advisory Committee centers around three primary charges, including:

1. Assess current capacity findings and identify options to align future school capacities with enrollment projections and educational program requirements;
2. Develop recommendations for addressing capacity, including costs and timelines;
3. Prepare a Final Report and Recommendations to the School Committee.

Based on the above parameters, a 15-person Advisory Committee was appointed and tasked with developing and recommending a 5-10 year capital plan for school facilities. To do so, they analyzed current facilities and enrollment forecasts, and developed conceptual plans and timelines for much-needed additional educational spaces. DiNisco Design provided professional support for this effort pursuant to an existing contract.

The LPS 10-Year Master Plan and the LPS Master Planning Compendium you are now reading reflect the Advisory Committee’s efforts to address the three charges given to them by the School Committee.

III: DEFINING THE PROBLEM

While the Lexington Public School system has experienced enrollment growth at all levels, for a number of recent years the most rapid growth was concentrated in the lower grade levels. In response, the Town of Lexington recently completed critical school building projects to address elementary space needs. This included a new Lexington Children's Place that opened its doors in 2019, followed by a new, larger Hastings Elementary School in 2020.

What is the greatest and most critical need facing the school system in the next five years?

Given this recent history, the Advisory Committee began this effort with questions focused on elementary (K-5) enrollments and the need for relief at this level. With the help of members of the Enrollment Advisory Group (EAG), it quickly became apparent enrollment trends have since changed. While the recent projects were effective at creating much needed elementary space, enrollment growth has shifted to the secondary level, putting pressure on our existing middle and high school facilities. In particular, severe overcrowding and enrollment pressures have plagued Lexington High School for years, but the situation continues to worsen. Therefore, it was decided that planning efforts and resources for capital improvements would need to be redirected to Lexington High School.

If current projections hold, by the year 2025, LHS enrollment is expected to reach its peak with over 2,500 students (or 650 students over the planned operating capacity).

Prior to the pandemic, we learned that elementary and middle school enrollments appear to be stabilizing for the next five years, while high school enrollments are expected to increase significantly. Recent enrollment declines attributed to the COVID-19 pandemic, largely impact elementary and middle school grades. LHS enrollment remains high and is consistent with projections for the 2020-21 school year, still exceeding the capacity of the building.

Lexington High School, originally built in 1953, has an open campus plan with several individual buildings. Students must exit one building to get to another class in another building. LHS has undergone several major renovations since, including the construction of a new library completed in 2001 to create the space needed to serve up to 1,850 students. In 2014, when it was clear that enrollment growth was outpacing capacity, a modular building was added, providing an additional 17,000 square feet for core academics. While this created academic spaces intended for approximately 2,250 students, core spaces, including both cafeterias remained unaltered and significantly undersized to accommodate the growing enrollments. Further, this expansion did not address the quality of the academic spaces throughout the main building. By today's standards, the average classroom size at LHS is significantly smaller than

the recommended square footage associated with 21st century learning environments and the Massachusetts School Building Authority (MSBA) guidelines. In 2014, Lexington participated in the Green Roof Repair Project, in which part of the aging and damaged roof over the cafeteria was replaced. In 2015, another modular was installed at LHS, resulting in 8,000 additional square feet mostly dedicated to students with disabilities. In that same timeframe, the LHS buildings were retrofitted to increase the wireless capacity needed to ensure adequate technology for teaching and learning. Throughout the years, there have been a few modest addition/renovation projects to attempt to meet the needs of our growing population.

Based on current projections, by the year 2025, enrollment in grades 9-12 is expected to reach its peak with over 2,500 students. An enrollment topping 2,500 means that LHS will be approximately 650 students over the capacity of the core spaces and classrooms. In addition to overcrowding, the current high school facility faces deteriorating conditions, and it is not well configured for modern instructional approaches and educational needs. The current facility, with its unique design, also presents certain security challenges. With rapidly rising secondary enrollments and the growing need for a new or renovated high school, no planning document has been more vital to the work we do on behalf of students in the Lexington Public Schools.

While the primary focus is on the secondary schools, we want to keep in mind that stable or declining elementary enrollments may offer a rare opportunity to address aging facilities. Bridge and Bowman Elementary Schools will eventually need to be replaced, and to do so during stable enrollment periods could minimize school-based disruptions, mitigating the potential negative impacts on teaching and learning. While it is easy to problem-solve on paper, finding the resources to meet our needs is another matter. We acknowledge that the Town of Lexington must carefully weigh the collective needs of both our school system and municipality, and we must seek a balance in order to address the pressing needs of both entities. Municipal leaders recently engaged in a capital planning process of their own, taking into account shifting conditions and competing demands. The Advisory Committee recognizes an opportunity to integrate the LPS 10-Year Master Plan into the Town's anticipated capital plan.

IV: LPS FACILITIES AND STUDENT ASSIGNMENT

Current School Facilities: 2020-2021

LPS comprises six elementary schools (grades K - 5), two middle schools (grades 6 - 8), and one high school (grades 9 - 12). LPS also includes a pre-kindergarten program, the Lexington Children's Place, and serves nearly 220 Boston Metropolitan Council for Educational Opportunity, Inc. (METCO) students who attend schools throughout the district. The map shown here marks the location of the district's schools and central administrative offices. Generally, students who attend Fiske, Estabrook, and Hastings Elementary Schools move to the Diamond Middle School, while students who attend Harrington, Bridge, and Bowman Elementary Schools move to Clarke Middle School. The majority of students then move into Lexington High School, the only high school in the district. After middle school, approximately 10-20 students move to Minuteman Regional High School, which is an out-of-district option to take part in their career vocational technical programs.

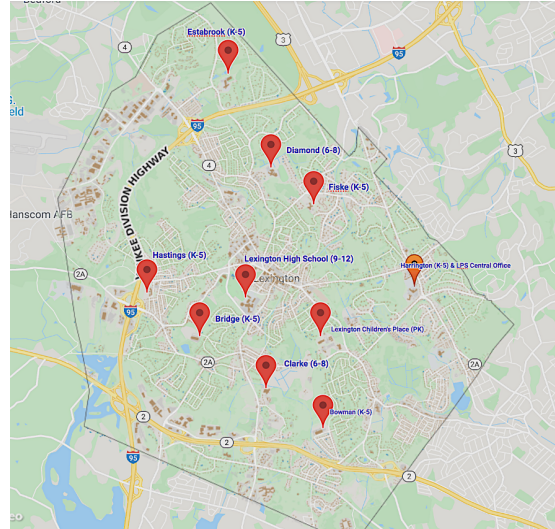


Table 1. Existing School Building Information

	Gross Sq. Footage	Grades Served	Year Built	Additions/ Renovations
Lex. Children's Place	19,000	PK	2019	
Bowman	67,900	K- 5	1964	1999, 2013, 2016
Bridge	65,400	K - 5	1965	2013, 2016
Estabrook	91,800	K - 5	2014	
Fiske	75,500	K - 5	2006	2016
Harrington	89,000	K - 5	2004	
Hastings	110,000	K - 5	2020	
Clarke	145,000	6 - 8	1972	2000, 2017
Diamond	155,300	6 - 8	1958	1989, 2000, 2017
Lex. High School	259,600	9 - 12	1953	1957, 1965, 2000, 2009, 2014, 2015
Central Office	45,200		1956	

Specialized Programs

At the elementary, middle, and high school levels, a number of district-wide programs exist to service students with low-incidence disabilities by offering intensive support. Each school houses at least one district-wide program. In alignment with the [district's strategic plan](#), an emphasis on increasing the inclusion of students in all programs is a continued focus. These programs include the following:

- The **Developmental Learning Program (DLP) at Harrington Elementary School and Clarke Middle School** provides services to students with significant developmental delays or intellectual/neurological impairments.
- The **Substantially Separate Intensive Learning Program (ILP) at Fiske Elementary School, Diamond Middle School, and Lexington High School** provides services for students with Autism Spectrum Disorder (ASD) and other related disabilities with intensive needs including deficits in language, social communication, play skills, abstract thinking, and behavior. The Intensive Learning Programs provide highly individualized services involving behavioral approaches, typically based on Applied Behavior Analysis principles to learning.
- The **Integrated Intensive Learning Program (ILP) at Hastings Elementary School, Clarke Middle School and Lexington High School** also services students with Autism Spectrum Disorder (ASD) and other related disabilities. Through this integrated approach students are included, often with support, for the majority of their school day within the general education setting. The FY2022 budget includes the development of an Integrated Intensive Learning Program at Diamond Middle School.
- The **Language Learning Program (LLP) at Bowman Elementary School, Clarke Middle School, Diamond Middle School, and Lexington High School** services students who have significant language-based learning disabilities. These students typically have average cognitive abilities, but they are not acquiring reading, writing, and/or language usage skills at the same pace or level as their peers.
- The **Therapeutic Learning Programs at Bridge Elementary School, Estabrook Elementary School, Clarke Middle School, Diamond Middle School and Lexington High School** service students with significant emotional impairments or other disabilities that may manifest themselves through difficulties with self-regulation. These students may or may not have associated learning difficulties.

The LABBB Collaborative serves approximately 120 students from 60 different communities, and Lexington High School is the host site. Initially, the LABBB Collaborative was formed in 1972 in response to the need for more specialized programs for students with unique needs.

Founding member districts include Lexington, Arlington, Burlington, Belmont, and Bedford, with programs located in public school buildings in each of these communities. LABBB serves students with a variety of special needs, including students on the autism spectrum, and those with multi-handicaps, pervasive developmental disorders, developmental delays, language deficits, and/or social/emotional challenges.

Recent Building Projects

Elementary school enrollments in Lexington were on the rise from 2008 through 2015. Overcrowding was particularly acute at Bowman, Bridge, and Fiske Elementary Schools and Clarke Middle School. Three of these schools are situated in the south easterly portions of Town. Elementary and middle school building projects during this period of time addressed deteriorating facilities and environmental issues, while expanding district capacity to match the growth that had already occurred. Even after a new larger 27-section Estabrook Elementary School was completed in 2014 following the detection of polychlorinated biphenyls (PCBs) in the old school, K-8 student enrollments still outpaced classroom space. Shortly thereafter, modular additions were approved for the Fiske, Bridge, and Bowman Elementary Schools, and they were completed for use in the 2016-2017 school year.

In 2017, the Town of Lexington completed additional brick and mortar expansions on Diamond and Clarke Middle Schools. In the fall of 2019, a new stand-alone facility, Lexington Children's Place (LCP), was opened to house the district's pre-kindergarten students. The new LCP provides sufficient space for the district's preschool program, and it frees up space at Harrington Elementary School and central administrative offices. Finally, in February, 2020, the new 30-section Hastings Elementary School opened, replacing a much smaller (21 section) deteriorating elementary school building.

Redistricting & Student Assignment

In addition to building projects, the school administration employed other strategies to manage rising elementary and middle school enrollments. The administration executed a small-scale change to school assignment maps in 2016. The main goal of this effort was to provide some relief to the most overcrowded schools—Bridge, Bowman, and Fiske Elementary Schools. However, since not all school building projects were completed at this time—including the new Hastings Elementary School, the new Lexington Children's Place and both middle school expansions—there was insufficient space district-wide to make adjustments to middle school assignment areas or fully relieve overcrowding. Knowing another larger scale redistricting effort was on the horizon, the adjusted elementary school assignment areas were applied to newly enrolled students only. No students already enrolled were asked to change schools at this time. As of October 1, 2016, 103 students were assigned to new schools based on the new elementary maps, with the majority of these students entering Kindergarten.

Shortly after the 2016 change in school assignment maps, the district briefly explored the use of “buffer zones.” A buffer zone is a specific geographic area or set of areas within a community where residential addresses can be assigned to one of multiple possible schools to maximize flexibility. Upon registration, a student living in a buffer zone would be assigned to one of the possible schools based on enrollment and capacity conditions. Although this approach is employed by some neighboring communities including Arlington, Brookline, and Newton, the approach was ruled out in Lexington after community deliberation. Instead, a practice known as “flexible assignment” was adopted beginning in the spring of 2016.

Flexible assignment allows the administration to consider current school capacities when placing any newly registered students. Students may be assigned to an adjacent school outside of their assignment area, if their assigned school is considered “near or at capacity”. The approach offers advantages and also presents challenges. It allows the administration to make assignment adjustments when class sizes are over the established class size guidelines. However, the flexible assignment approach is a time-intensive process to administer, and it can create inefficiencies in transportation with overlapping service areas. Furthermore, it can be a difficult experience for newly arriving families who are looking for more certainty in their child’s school placement. In addition to these limitations, there have been a number of students considered for flexible assignment who were ultimately placed at their originally geo-coded school due to factors such as the absence of a nearby bus route to an adjacent school, lack of room in adjacent schools, or an older sibling already assigned to the geo-coded school. Although flexible assignment can be a helpful tool, it is not a complete solution to school-based capacity challenges.

Newly available space created by a series of middle school and elementary building projects, including the new Hastings School completed in February 2020, enabled the administration to implement a comprehensive redistricting plan. The goal of this redistricting plan, approved by the School Committee in December, 2019 and fully implemented in 2020-2021, was to effectively use newly available school capacity to fully relieve overcrowding in schools and ensure equitable and appropriate learning environments for all students across the district.

V: STUDENT ENROLLMENT & TRENDS

Enrollment: 2020-2021 Update

Student enrollment is often a key driver of many decisions of a school system and community. This includes decisions about budget, academic offerings and services, facilities, transportation, staffing and other logistical considerations. The study of student enrollment is fundamental to the master planning process, as it is a core element of the needs assessment. Table 2 summarizes the most recent annual enrollment numbers recorded as of October 1, 2020, for the 2020-2021 school year. Prior to the latest round of redistricting, Bridge, Bowman and Estabrook were Lexington's largest elementary schools. Enrollment had been roughly equivalent across the district's two middle schools. With the implementation of new assignment maps now well underway since approval in December 2019 and the new and much larger Hastings elementary school now open, Hastings is now LPS's largest elementary school. We also see higher enrollment at Diamond middle school.

Table 2. Enrollment by Grade (as of October 1, 2020-2021)

	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	Total
Lex. Children's Place	57														57
Bowman		54	71	75	87	89	94								470
Bridge		39	57	65	69	74	96								400
Estabrook		66	79	90	97	87	103								522
Fiske		41	58	62	75	62	89								387
Harrington		44	67	77	85	97	76								446
Hastings		65	76	111	94	123	96								565
Clarke Middle								278	302	301					881
Diamond Middle								289	299	324					912
Lexington High											550	599	582	530	2261
Total (PK - 12)	57	309	408	480	507	532	554	567	601	625	550	599	582	530	6901

Special challenges related to space and staffing, when relatively large or very small student cohorts move through a school system, may require disruptive year-to-year resource and staff reallocations. Current cohort sizes of note are highlighted in blue and gold in Table 2. We currently have relatively large cohorts in grades 7 (year of graduation 2026), 8 (year of graduation 2025), 10 (year of graduation 2023) and 11 (year of graduation 2022). Conversely and very likely linked to the ongoing Coronavirus pandemic, the incoming kindergarten cohort (year of graduation 2033) was unusually small this year (309 in 2020-21 compared to 382 to 414 students during the previous years).

Lexington's overall enrollment peaked in 1969. During this year, the district served just over 9,600 students and had 11 elementary schools, three middle schools and one high school. Enrollment dropped precipitously over the next two decades.

Chart 1 shows more recent historical total enrollments from the last 30 years. Chart 2 shows enrollment changes by grade level for the same time period. A more recent enrollment peak occurred in 2019 when K to 12 enrollment was 7,190 (or 7,259 PK to 12). Leading up to this peak, K - 5 elementary school enrollments had been on the rise from 2008 to 2015. During this time period, the district gained an additional 375 students in grades K - 5. There were also increases experienced at the secondary level, but enrollment growth was not as acute.

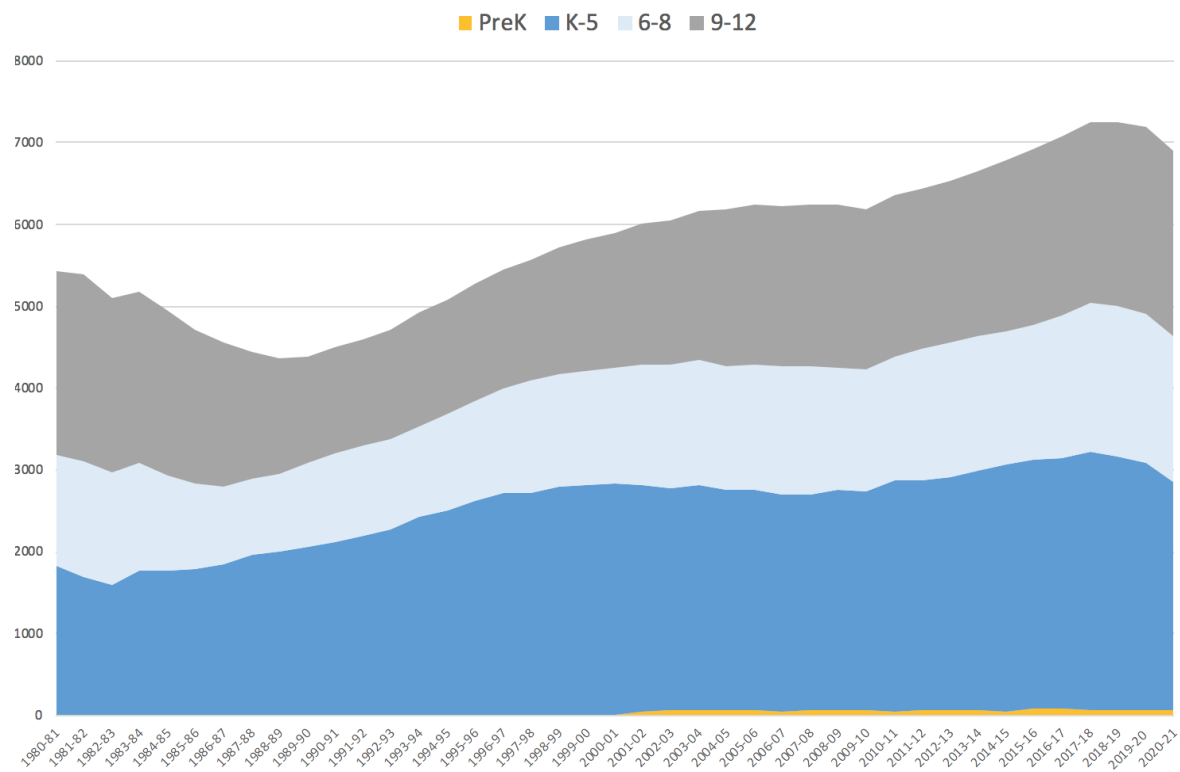


Chart 1. Lexington Public Schools Grade PK - 12 Annual Enrollment

In 2019-20, just before the pandemic, elementary enrollment had somewhat stabilized, with a 5 year average annual growth rate close to 0%. Growth had shifted to the secondary level as larger student cohorts previously making their way through the elementary level entered the secondary grades. The 5 year average annual growth rate prior to the pandemic was 2.5% at the middle school level and 1.7% at the high school level.

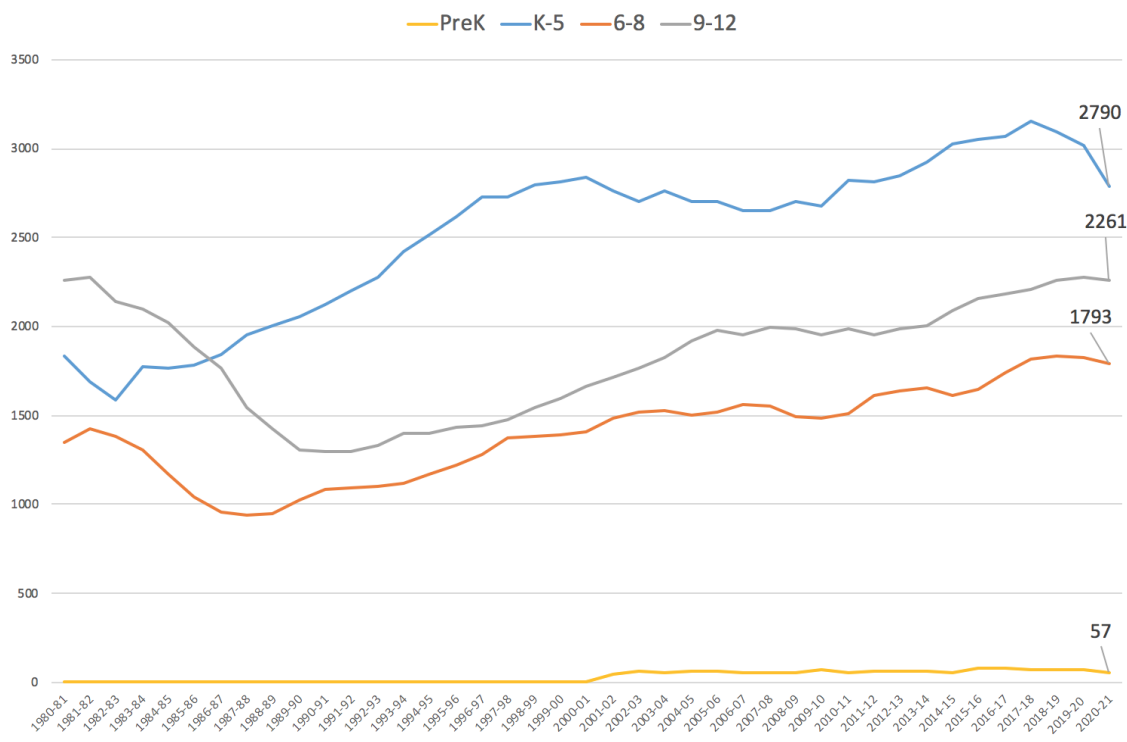


Chart 2. Lexington Public Schools Annual Enrollment By Grade Level

With the Coronavirus pandemic, like many school systems across the Commonwealth, LPS experienced a drop in enrollment for the fall 2020–21 school year. As of October 1, 2020, K–12 enrollment was 6,844 (or 6,901 PK– 12). This was a decrease of 278 students, or -3.9% K–12 from the previous year, the largest decrease since the 1982–83 school year when enrollment contracted by 275 students or -5.11%.

The majority of this decline comes from the elementary level (229 out of the total 278 decrease from the prior year). A portion of this decrease appears to be the consequence of lower than typical kindergarten enrollments. As of October 1, 2020, Lexington enrolled 309 kindergarten students (compared to 382 to 414 students during the previous years). Although K enrollment had been declining prior to this year, this year's decline of 73 K students was much sharper.

Review of student transfer reasons (Table 3) show increases in the number of students transferring to other public schools in Massachusetts, transferring to private schools in Massachusetts, transferring to schools out of state or switching to homeschooling. The largest increase was in the number transferring to in-state private schools (an increase of 112 students from the prior year).

Table 3: LPS Transfer Reasons FY2020 vs. FY2021

	Transferred — In state public		Transferred — In state private		Transferred — Out-of-State (public or private)		Transferred — Home-school	
<i>Grade in FY21</i>	October 2019-20	October 2020-21	October 2019-20	October 2020-21	October 2019-20	October 2020-21	October 2019-20	October 2020-21
<i>K</i>	3	5	0	7	3	5	0	0
<i>1</i>	2	11	2	11	5	5	0	5
<i>2</i>	4	3	1	10	11	12	0	2
<i>3</i>	3	9	2	17	4	8	0	1
<i>4</i>	2	10	2	12	4	12	1	4
<i>5</i>	5	6	1	10	11	20	0	0
<i>6</i>	6	3	6	20	10	13	0	0
<i>7</i>	6	10	2	13	5	18	0	2
<i>8</i>	3	22	3	21	6	13	0	0
<i>9</i>	8	5	14	14	19	16	0	0
<i>10</i>	1	5	8	10	13	7	0	1
<i>11</i>	2	3	3	8	7	6	0	0
<i>12</i>	5	1	1	4	6	1	0	0
Total	50	93	45	157	104	136	1	15

This is consistent with information gleaned from our School Attending Children data, which shows for the last ten years, just under 90% of Lexington children attend one of the local public schools, accounting for the majority of school aged children who reside in Lexington. During the most recent year (2020-21), this proportion decreased slightly to 86.8%. Consistent with other datasets available to LPS, it appears a greater number of Lexington families opted for homeschool (0.3% in 2019-20 to 0.7% in 2020-21) or enrolled in an in-state private or parochial school (8.7% in 2019-20 to 10% in 2020-21). You can view public statewide Students Attending Schools reports [here](#).

Even with recent enrollment declines related to the COVID-19 pandemic, which largely impacted elementary and middle school grades, LHS enrollment was in line with projections for the 2020-21 school year and remains high, still far exceeding the capacity of the building. LHS enrollment was projected to be 2,295 for the 2020-21 school year. Actual enrollment of 2,261 was within the lower bound of the confidence interval (± 40).

For further detail, district enrollments by grade level can be accessed [here](#). District annual growth by grade level can be accessed [here](#). Enrollment by grade and annual growth by school can be accessed [here](#).

Enrollment Projections: 2020-2021 Update

Each year the district reviews new student enrollment based on October 1 and produces updated enrollment projections. These projections are offered as a planning tool, but not a definitive prediction of future enrollment. Projections are built on the assumption that historical data and enrollment patterns can offer clues about the future. However if new variables not present or accounted for in historical data are introduced (i.e. a global pandemic) that have an impact on enrollment, enrollment projections based on this data are unlikely to hold.

In addition to the context offered earlier, at the time of this report, distribution of a newly available Coronavirus vaccine had just begun. While this is very much welcomed news and may allow for a return to more typical school operations, we continue to plan and budget in a highly uncertain environment. The current pandemic has affected the economy and is likely to have continuing economic impacts. We do know regional and other high level economic conditions generally do have an impact on our enrollment and we therefore must be mindful of this going forward.

For the purpose of future planning, LPS will carry forward the enrollment projections and confidence intervals¹ produced in FY2019 (see Table 4). The decision to carry over the prior year projection assumes 2020-21 enrollment is an outlier and will therefore be excluded from future enrollment projections. It also assumes successful, wide distribution of an effective COVID-19 vaccine in addition to continued use of risk mitigation strategies for the remainder of the 2020-21 school year. If COVID-19 can be dramatically reduced allowing a return to normal operations, this projection also reflects an assumption that the majority of families who delayed kindergarten enrollment or transferred into local private schools will return to LPS. For scenarios where smaller numbers return, the lower end of the confidence interval should be considered.

Table 4. Current Enrollment Projections with Confidence Intervals

	Actual '20-'21	Projected '21-'22	'22-'23	'23-'24	'24-'25	'25-'26	'26-'27	'27-'28	'28-'29	'29-'30
K - 5	2790	2997	2987	2982	3009	3065	3075	3085	3086	3096
		±70	±70	±70	±70	±75	±75	±75	±80	±80
6- 8	1793	1876	1870	1873	1837	1777	1767	1793	1793	1849
		±55	±60	±65	±70	±75	±80	±90	±95	±100
9 - 12	2261	2396	2444	2455	2509	2508	2499	2471	2471	2407
		±50	±50	±60	±60	±70	±70	±80	±80	±90

¹ A specific point estimate of future enrollment is of limited usefulness because it does not acknowledge the associated uncertainty. In recognition of this, upper and lower 90% confidence intervals are produced for all enrollment projections. Correct interpretation of such intervals is that, if the underlying conceptual model is correct, there is a 90% chance that the confidence interval contains the true value of future enrollment. However such conceptual models are often not completely correct in which case the confidence intervals correspond to lower probabilities; these effects are difficult to quantify. It is recommended that plans based on projections consider the confidence intervals and incorporate appropriate flexibility.

Updated enrollment projections and the confidence intervals² that informed the master planning process are summarized in Table 4. The most recent set of enrollment projections suggest that elementary enrollments will remain stable. Middle school enrollment is expected to be stable for the relative short term (i.e., the next 4 years), and then decline somewhat in the second half of the forecast window. High school enrollments are projected to peak in 2024-2025 at around 2,500 students. Even after this peak, the existing high school facility will continue to remain over capacity.

About LPS Projections:

For the set of projections published here, a version of the Cohort Survival Method was used, which is one of multiple models the district runs each year. In this version, future kindergarten enrollments are based on a linear model that incorporates 30 years of historical kindergarten enrollments. Average grade-to-grade progression rates are then applied to the rest of the grades.

Projections include 90% confidence intervals, reflecting the inherent uncertainty associated with projections. Correct interpretation of intervals is that there is a 90% chance that the confidence interval contains the true value of future enrollment. It is recommended that plans based on projections consider this confidence interval and incorporate appropriate flexibility. LPS will continue to monitor enrollment very closely and strongly encourage those engaged in planning to consider multiple future scenarios..

Enrollment projections provide a description of what enrollment may look like, assuming previous enrollment patterns will repeat and the underlying conditions and drivers of enrollment trends will persist. It is important to keep in mind that projections are not destiny, and they are always subject to change. Applicable to recent events, this analysis of enrollment was completed in the fall of 2019, prior to the current global pandemic and the likely economic downturn to follow. When considering these data, we should take a cautionary approach, as there has been a significant change in overall conditions since this analysis was first completed, which will likely impact future enrollments. Moreover, longer range forecasts are less reliable. Enrollment projections can help inform future short- and long-term planning, but they should always be interpreted and used along with other information. It is for these reasons that flexibility and acknowledgment of future uncertainty are particularly important features of the Lexington Public School's Master Plan.

² A specific point estimate of future enrollment is of limited usefulness because it does not acknowledge the associated uncertainty. In recognition of this, upper and lower 90% confidence intervals are produced for all enrollment projections. Correct interpretation of such intervals is that, if the underlying conceptual model is correct, there is a 90% chance that the confidence interval contains the true value of future enrollment. However such conceptual models are often not completely correct in which case the confidence intervals correspond to lower probabilities; these effects are difficult to quantify. It is recommended that plans based on projections consider the confidence intervals and incorporate appropriate flexibility.

VI: SUMMARY OF ADVISORY COMMITTEE RECOMMENDATIONS

After careful analysis of the aforementioned information, the Lexington Public Schools Master Planning Advisory Committee makes the following recommendations and comments.

- (a) MPAC review indicates that no new space is presently needed at the preschool or elementary level, nor is it likely to be needed for several years. However, elementary school enrollments must be carefully monitored for opportunities to replace aging facilities in the event of more dramatic enrollment declines or for another episode of unexpected enrollment growth.
- (b) MPAC review indicates that no new space is presently needed at the middle school level, although enrollments may stay near or just over capacity for several years. Similar to the case of elementary school enrollments, middle school enrollments should be carefully monitored.
- (c) In light of current and projected LHS enrollments being substantially higher than a reasonable estimate of the school's capacity, **the Master Planning Advisory Committee strongly endorses the plan to increase the size of the high school facility by replacing it with a new building or by completing a comprehensive renovation with additions.**

The Master Planning Advisory Committee endorses redistricting to balance school-by-school enrollments, if needed. The Advisory Committee also recommends that the Town actively looks for opportunities to acquire new properties that could serve, if the need arises in the future, as the site for a seventh elementary school or third middle school, as the location of the School Central Office in case the Old Harrington site needs to be used for school expansion or swing space for a new or renovated high school project. In addition, the Advisory Committee has recommended that a publicly-available document be prepared by the Department of Public Facilities along with LPS with an inventory of all school building systems, including life-safety, heating, mechanical, and others, as well as measures of sustainability. This will be regularly reviewed along enrollment numbers and projections, the condition of school building systems, recommended master plan strategies, the current Town of Lexington [Integrated Building Design & Construction Policy and Checklist](#) and other information pertinent to the utilization of school facilities and should inform any adjustments to the above recommendations.

VII: STRATEGIES PRIORITIZED BY GRADE SPAN, ENROLLMENT PRESSURE, AND ASSOCIATED COSTS

Preschool and Elementary (Grades PK-5)

PK-5 Current Conditions

As noted above, the current data suggest that enrollments at the elementary level were relatively stable prior to the pandemic, declining only in the last year. No new space is needed currently at the elementary level due to the substantial additional K-5 space made available by Lexington Children's Place moving out of Harrington Elementary School, and the opening of the new Hastings Elementary School with significantly more classroom sections available than in previous years. Elementary school enrollments need to be carefully monitored for unanticipated episodes of enrollment growth.

Elementary Enrollment: Lower than Projected

If future elementary enrollment is lower than projected, it would allow all class sizes to fit within School Committee policy [guidelines](#). A significant decrease in the enrollment opens up the possibility that either the Bridge or Bowman Elementary School, two of our oldest school buildings, could be closed temporarily for renovation, saving the Town the costs of performing required repairs and improvements while the school remains in service. Alternatively, if the enrollment decreases to the point that one of the six elementary schools is no longer needed, it could be used as swing space if another school is being considered for replacement or renovation. In order for school consolidation to occur, there must be sufficient capacity at the other five elementary schools to accommodate the residual enrollment at a particular school including the district-wide special education program that is housed at that school. While there are many ways that school consolidation could be managed, it remains unlikely that the district would have such a reduction in enrollment in the foreseeable future based upon the current enrollment forecasts and trends.

Elementary Enrollment: As Anticipated

If the enrollment follows the anticipated profile, there will be sufficient capacity within the existing facilities to accommodate the enrollment. Strategies such as flexible assignment or redistricting should be considered as necessary in order to balance enrollment with the capacity of each school. The capacity at the existing schools tends to match the anticipated enrollment with little to no underutilized space at any of the facilities given current class size guidelines.

Elementary Enrollment: Higher than Projected

If future enrollment is higher than expected, strategies other than redistricting or flexible assignment must be considered. Redistricting and flexible assignment are stopgap measures intended to temporarily balance overcrowding in schools while alternative strategies are under consideration. The most obvious non-brick-and-mortar strategy is to increase class sizes,

although smaller class sizes are a hallmark of Lexington Public Schools. The Advisory Committee took into consideration the possibility of transferring one or more of the district-wide special education programs from within the school system to an out-of-district venue, but this strategy was quickly eliminated. Special education students require stability and all our children, both with and without disabilities, deserve to learn together with their peers in their community. The Advisory Committee considered the possibility of changing the grade levels serviced by the elementary schools (e.g., moving fifth grade to the middle schools), but this is an unrealistic strategy at present given that we lack sufficient space elsewhere in the system to offload an entire grade level. Finally, if additional space is required to accommodate elementary students, the district will continue to engage in space-mining exercises and explore the purchase of portable or modular construction and/or the addition of permanent classroom space before pursuing the construction of a seventh elementary school.

Middle School (Grades 6-8)

Middle School Current Conditions

Renovations and additions of both the Diamond and Clarke Middle Schools to increase capacity were just completed in 2017. Those projects were planned several years before that when the middle school enrollments were lower than now but increasing. Prior to the pandemic, both schools were close to capacity. With the implementation of new assignment maps, we are now seeing the desired higher enrollment at the Diamond middle school, the larger of the two middle schools. This provides much needed relief from overcrowding to our Clarke Middle School. Recent enrollment declines at the middle school level have also offered some relief. If enrollment rebounds post-pandemic and current projections hold, the middle school enrollments will stay near or just over capacity for several years. Similar to the case of elementary school enrollments, the middle school enrollment figures need to be carefully watched.

Middle School Enrollment: Lower than Projected

If future enrollment is lower than projected, this would allow our middle school team sizes to be at or below their desired levels. The current team sizes for Grades 6-8 typically include 80–92 students per team, with an average team size of 86 students. The students are spread out over four core subjects, resulting in 21.5 students per class. One strategy to consider should there be a significant decrease in enrollment at the middle school level would be to move the fifth grade up to from the middle schools or to move the ninth grade down from the high school to alleviate overcrowding at those levels. To successfully implement this strategy, there would need to be a reduction of students equivalent to an entire grade. Projected forecasts suggest one grade level is the equivalent of approximately 600 students.

Middle School Enrollment: As Anticipated

If the enrollment follows the anticipated profile, there will be sufficient capacity within the existing facilities to accommodate the students. If the enrollment forecasts hold true, we do not anticipate a need for new middle school construction. If necessary, we will continue to utilize

flexible assignment and redistricting to periodically balance the enrollments at the two middle schools.

Middle School Enrollment: Higher than Projected

If future enrollment is higher than expected, the number of students per team will need to be increased, at least until additional space can be provided. Flexible assignment and redistricting should also be utilized to balance the enrollments at Diamond and Clarke. If the enrollment increases beyond some to-be-determined point, additional space will be required, likely in the form of an addition to one or both middle schools. Depending on the anticipated duration of the increase, portable, modular, or permanent construction would be in order. At present, it seems unlikely that the enrollment will increase to the point that a third middle school should be seriously considered.

High School (Grades 9-12)

As we consider master planning strategies at the secondary level, Lexington High School presents a different set of challenges. The purpose of this section is to describe the rationale for a core high school capital project; to elaborate on the critical analyses that led to the Advisory Committee's recommendation; and to examine strategies that may be necessary to consider in the next few years.

High School Current Conditions

Exceeding Planned Operating Capacity

A significant and steady uptick in enrollment has led to an increase of over 1,000 students in the district in the past ten years. The school district has consistently experienced overcrowding in all of the elementary, middle and high school grades, but nowhere is the overcrowding felt more intensely than at Lexington High School (LHS). Analysis of enrollment data indicates that by the year 2024-2025, the LHS projected enrollment could reach roughly 2500+ students and could continue at or near that level for the foreseeable future. Even if enrollment does not reach 2,500+ students, any measurable increase puts additional pressure on the planned operating capacity for large core spaces, such as the cafeteria and lunchroom spaces, as well as the instructional spaces. The core spaces were designed for 1,850 students, and the current high school enrollment would need to decline by approximately 450 students for the core spaces to be within the planned operating capacity. Even in these unpredictable times, such a scenario seems unlikely.

Significant Overcrowding

The significant overcrowding at Lexington High School creates a serious challenge for our community. Nearly 100% of existing classrooms are undersized; 100% of science rooms do not meet the MSBA standard of 850 square feet, and approximately 30% of general education

classrooms do not meet the recommended square footage guidelines. Common areas such as cafeterias and hallways are inadequate for their intended functions. Teaching and learning are impacted on a daily basis, and overcrowding creates safety hazards, such as congested hallways. Educators are forced to search for space to teach and collaborate, and LHS is in a constant state of retrofitting classrooms to ensure all students have access to fundamental learning experiences.

LHS lacks adequate space for invaluable learning experiences in areas such as the science labs and the performing arts. Many students must eat lunches in hallways, as there is not enough seating in the dining areas to accommodate all students. Hallway spaces are already congested with mobility equipment due to inadequate storage and students trying to complete schoolwork, creating additional health and safety concerns. Many campus doors have been locked in an effort to tighten security; however, this means there are fewer viable routes to move from one building to another, which further exacerbates overcrowding in the hallway.

Overcrowding also impacts our ability to implement an innovative schedule that would enable LHS to meet the 990-hour time-on-learning requirement. An innovative schedule would require approximately 10% more space at LHS than does the current antiquated 8-period schedule that negatively impacts time-on-learning. Moreover, the impact of overcrowding has resulted in inadequate space for students with disabilities in the LABBB Collaborative Program and the Intensive Learning Program (ILP), as well as a shortage of space for English Language Learners (ELLs). Due to space limitations, the administration is unable to create inclusive, in-district programs for students with disabilities who should be educated with their peers whenever possible.

In the [2008](#) and [2020](#) New England Association of Schools and Colleges (NEASC) Accreditation Reports, LHS earned a rating of “**Does Not Meet the Standard**” due to the poor condition of the facility. The accreditation team reported in 2020: “Enrollment has outpaced the addition of buildings, creating significant space issues in classrooms, the cafeteria, and other facilities.”

Unmet Programmatic Needs

Overcrowding and the poor condition of the LHS facility necessitates repeated short-term capital planning exercises that are burdensome, costly, and not conducive to excellence in teaching and learning. While we have undertaken many complex planning exercises in order to deliver the curriculum, the efforts recently undertaken to ensure that all students can participate in Science are illustrative of the challenges we face. Prior to the pandemic, two options were considered (1) implement alternative scheduling and course sequence changes to accommodate increasing enrollment; or (2) build two additional Science Labs at a cost of \$1.1 million. A request for funding was submitted and approved at the 2019 Fall Special Town Meeting.

In light of the future new or renovated high school, the request was rescinded and a decision was made to implement a short-term plan for a fraction of the costs. The complex, less-than-ideal short-term plan temporarily ensures that LHS students have access to Science

Labs. The plan did not cost the \$1.1 million originally anticipated; however, there were approximately \$150,000 in associated costs related to the relocation, equipment, chemical fume hood and ventilation, eyewash, minor plumbing upgrades, and furniture. These temporary measures add up and do not adequately address the students.

A series of complex steps had to be implemented to avoid the \$1.1 million Science Lab construction project. The LHS short-term space reconfiguration plan commenced in 2019-2020. In order to ensure that students had access to Science Labs, we added one Biology Room, which necessitated a series of moves.

1. Earth Science (Room 313) becomes the 6th Biology classroom;
2. Physics (Room 303) becomes Earth Science (from 313);
3. Room 418 becomes Physics Room (from 303);
4. Materials from Room 418 are moved to first floor storage; and
5. Room 418 offices are shifted to Rooms 413, 401, 300, and 301.

In 2020-2021, one Chemistry Room was added, necessitating the following additional changes:

6. Retrofit Room 420 (Biology) to be a Chemistry room;
7. Relocate Biology from Room 420 to Room 315 Earth Science;
8. Relocate Earth Science (Room 315) to 301 (Staff/Academic Support);
9. Relocate Resource Room (309);
10. Relocate Staff Room, Academic Support, and offices to Room 309.

LHS regularly engages in these kinds of space reconfiguration exercises. If the high school enrollment continues to increase per current projections, accommodations will be necessary for a population of 2,500+ students. As a school community, we are sure to be faced with many more difficult choices in the foreseeable future.

Advisory Committee Recommends A New or Renovated High School

The Advisory Committee undertook a series of planning exercises throughout to surface and synthesize recommendations for consideration by the full Advisory Committee. As outlined in the “About Our Planning Process” section of this report, the High School Working Group (HSWG) reviewed student enrollment data for grades 9 through 12, developing recommended strategies based upon enrollments that were “higher than anticipated” (2,450 - 2,650); “as anticipated” (2,250 – 2,450), and “lower than anticipated” (under 2,250). A summary of the High School Working Group’s initial recommendations can be found here: [HSWG Recommendations](#). Given the extensive needs of the Lexington High School facility, the HSWG strongly endorses two permanent construction priorities whether overcrowding exists or not. The following recommendations were adopted by the full Master Planning Advisory Committee:

1. To fully replace the existing Lexington High School facilities; or
2. To expand and renovate the existing high school buildings.

A project to either replace or renovate will be one of the most expensive projects ever undertaken by the Town of Lexington. The Master Planning Advisory Committee strongly endorses the plan to increase the size of the facility by replacing it with a new build or a comprehensive renovation with additions. The Advisory Committee recognizes that it would be highly advantageous to team with the Massachusetts School Building Authority (MSBA) to receive both planning and financial assistance from them. The Advisory Committee has endorsed the third submission of a Statement of Interest to the MSBA, due June 25, 2021. They further recommend low-cost non-permanent structures (e.g., portables and tents) as stop-gap measures to temporarily meet the critical needs for additional space at Lexington High School.

A capital project of this magnitude requires a substantial financial commitment, reinforcing the Advisory Committee's recommendation that we continue to explore the possibility of a partnership with the Massachusetts School Building Authority (MSBA). The actual price of the project remains to be seen, but several smaller high school construction projects that are currently under completion are in the \$400 million range. Lexington's effective reimbursement rate (i.e., the actual grant-funded percentage from the MSBA after ineligible costs) is estimated at approximately 25%. Given the anticipated costs, the effective reimbursement rate from the MSBA would be a significant contribution to the overall costs of a new or renovated high school. If the MSBA invites us into the capital pipeline and voters support a new or renovated high school, the State would fund approximately a quarter of the school construction/renovation project, and the remaining three-quarters of the funding would be assumed by Lexington taxpayers.

The MSBA has a dedicated funding stream that is derived from one penny of the State's 6.25% sales tax. If the MSBA invites Lexington into its "capital pipeline," a feasibility study determines whether to proceed with a project to replace or renovate and expand the high school. Since the MSBA's support is not guaranteed, Advisory Committee discussions often centered around the need for a Plan A for Lexington High School, as well as a Plan B. If a project is not funded by the MSBA, the next step would be to analyze the costs to Lexington of an MSBA-supported project at some estimated date in the future (Plan A) versus that of proceeding immediately without support from the MSBA (Plan B). The degree of MSBA support, the effects of construction cost escalation, the inherent value received from MSBA expertise, and the constraints that apply to an MSBA supported project would all need to be taken into account. Plan B is included in Table 5 via the priority "explore the feasibility of a Town-financed new school construction or renovation project."

As we await the possibility of a partnership with the MSBA, the overcrowding issues and unmet programmatic needs will continue to be a concern. The High School Working Group (HSWG) strongly recommends that we explore portables or even less-permanent structures, such as tents for outdoor eating. These stop-gap measures will enable us to meet additional space needs and spend fewer precious resources, as we await approval for a new or renovated high school. The Advisory Committee also recommends that we avoid the purchase of modulars or more costly semi-permanent structures. Other space-mining recommendations were considered but ruled out. For example, members of the Advisory Committee and the High

School Working Group **do not** support withdrawing from the district's 50-year partnership with the LABBB (Lexington, Arlington, Bedford, Belmont, and Burlington) Collaborative, nor do they recommend increasing special education outplacements if it can be avoided. The Advisory Committee wholeheartedly supports the district's commitment to the inclusion of students and supports avoiding out-placements when possible. Members also strongly support the district's commitment to students in the LABBB program. However, given the intense enrollment pressures at LHS, the HSWG is open to exploring alternative locations for ILP3, a more intensive sub-separate program currently experiencing some declining enrollments. Finally, the HSWG recommends exploring multi-site solutions, i.e., buying property and placing specialized programs near the LHS campus, as a method for reducing the amount of space needed on the main campus.

Table 5 summarizes strategies at the high school level by type and description, and prioritizes them by taking into consideration factors such as enrollment pressure and costs. Strategies labeled "Priority 1" should be among the first to be considered to address the specific enrollment conditions or the facility's unique challenges; "Priority 2" strategies should be among the next group to be considered, and so on. Strategies are classified according to three types, ranging from most to least expensive (1) Permanent Construction; (2) Temporary Construction; and (3) Non-Brick and Mortar.

While many of the HSWG's recommended strategies are incorporated into Table 5, others were added, revised, or ruled out by a smaller steering committee of Advisory Committee members (i.e., DiNisco Design, Director of Public Facilities, Director of Planning and Assessment, and Superintendent of Schools). Once the list of high school strategies was refined, it was brought back to the full Advisory Committee for final approval. Table 5 reflects the Advisory Committee's agreed-upon list of prioritized high school strategies in order of importance.

High School Enrollment: Lower than Projected

Lexington High School is significantly overcrowded; if enrollment is lower than projected, must first continue to explore the possibility of a new or renovated high school project. If future enrollment is lower than projected, we have an opportunity to rethink and potentially shift the remaining student populations and programs in order to renovate existing facilities. For the sake of argument, let's imagine for a moment that a significant portion of our high school population decides to learn through some alternative State-sanctioned remote option, such as a Virtual High School, due to ongoing pandemic-related fears. While this scenario is unlikely, if it were to occur we would not know the final enrollment figures for certain until October 1st, the date by which enrollments are finalized. If we do have a lower than projected enrollment of 1,850 - 2,250 students in a given year, the window of opportunity to address existing facilities issues would be relatively short. So what can we do if this occurs, particularly if we experience lower than projected enrollments several years in a row? The deteriorating condition of the high school facility needs constant attention and maintenance. It also would be an ideal time to continue to implement the non-brick and mortar space-mining strategies identified by the HSWG. The Advisory Committee also explored the possibility of consolidating grade

reconfigurations, such as bringing a grade up to the high school. Given the fact that the building is already overcrowded, it would be a highly unlikely and unrealistic strategy, unless we experienced multiple years of declining enrollments. A more feasible strategy would be to get a head start on those projects that would alleviate future anticipated enrollment pressure, such as those identified in this Lexington High School [space-mining document](#).

High School Enrollment: As Anticipated

If the enrollment follows the anticipated profile, with 2,250 - 2,450 students, we plan to continue to explore a partnership with the Massachusetts School Building Authority to fully renovate and expand or fully replace existing high school facilities. Further, we will continue to identify and implement the space-mining recommendations outlined above. The Advisory Committee also recommends the exploration of a Town-financed study to address outstanding community questions, such as questions related to the design of a building using high quality building standards and the land suitability for a new or renovated high school given the current site's wetlands. It is important to note that this study or undertaking is not to be confused with the feasibility study that is part of the MSBA's process. The purpose of the Town-funded study is to answer specific issues raised by various Town committees related to the construction of permanent buildings. Finally, if enrollments are "as anticipated," it presents an opportunity to consider a range of temporary structures from tents to construction-style mobile options for extra seating during lunches.

High School Enrollment: Higher than Projected

If future enrollment is higher than expected, with 2,450 - 2,650 students, there are a series of strategies to be considered. Some of the strategies identified in Table 5 below are duplicative and identified in the aforementioned sections related to *lower than projected* and *as anticipated* enrollments, such as Priority 1.

Table 5: High School Enrollment - Higher than Projected

HIGH SCHOOL ENROLLMENT - HIGHER THAN PROJECTED <i>enrollments much higher than present operating capacity (2,450 - 2,650+)</i>		
STRATEGY	COSTS	TIMELINE/NOTES
Type: Permanent Construction. Priority 1: Fully renovate and expand or fully replace existing high school facilities.	<ul style="list-style-type: none"> ❖ No cost associated with SOI submission. ❖ If approved, MSBA will fund approximately 32% of all eligible costs (effective reimbursement rate is lower). Town will need to allocate approximately \$1.8M for a Feasibility Study. ❖ The current figure being used by municipal administrators for the cost of a new high school is \$350M, but it is likely to be substantially higher. ❖ Escalation costs are estimated at 6% per year. 	<ul style="list-style-type: none"> ❖ SOI Submission #3 due date is June 25, 2021. ❖ Facility is 50+ years old and beyond its useful life.

<p>Type: Permanent Construction.</p> <p>Priority 2: Explore the feasibility of a Town-financed study to answer community questions about permanent buildings and construction.</p>	<ul style="list-style-type: none"> ❖ Minor costs will be incurred to conduct a study or analysis to address the community's outstanding questions. ❖ Substantial additional costs are associated with a new school construction project that is not subsidized by the MSBA. ❖ Conduct an analysis to see if it is more advantageous to build without external funding. Consider escalation costs as other communities have done to determine if it makes sense to fund locally or wait for MSBA approval (e.g., for every year we wait on a new or renovated school, we can reasonably assume 6% in escalation costs). ❖ Director of Public Facilities to prepare an itemized analysis/ breakdown of the \$175M need identified for Town-wide projects to maintain current facilities. Identify and itemize the funding needed for school-specific work and present to the Master Planning Committee and School Committee. 	<ul style="list-style-type: none"> ❖ The MSBA will communicate the status of our SOI Submission #3 in December, 2021. ❖ Could the timeline for completion of a renovated high school be expedited if funded locally?
<p>Type: Non-Brick and Mortar.</p> <p>Priority 3: Identify and implement space mining options.</p>	<ul style="list-style-type: none"> ❖ Science Lab renovations. Initial cost estimates \$1.5M; final cost approximately \$150K. ❖ Minor costs associated with additional moves (e.g., IT relocation to Central Office building). 	<ul style="list-style-type: none"> ❖ A comprehensive space mining exercise was completed in January, 2019. ❖ In progress: Science Lab renovations and IT Relocation completed in July, 2020.
<p>Type: Temporary Construction.</p> <p>Priority 4: Plan for occupancy of portable (not modular or prefabricated) additions for LHS by the 2022-2023 school year.</p>	<ul style="list-style-type: none"> ❖ Continue to explore LABBB Collaborative cost-share options given that the greatest number of LABBB students are on the LHS campus. ❖ Portable cost estimates done by DiNisco in 2019 were approximately \$4M for less square footage than what is currently used by LABBB. 	<ul style="list-style-type: none"> ❖ In 2021, review portable needs with the Master Planning Committee and consider the submission of a proposal at Fall Town Meeting. ❖ Portables meet both capacity and programming needs and provide flexibility.
<p>Type: Temporary Construction.</p> <p>Priority 5: Consider options to alleviate the pressure on shared large spaces, such as tent-style construction to "Open Campus" to create extra seating during lunches.</p>	<ul style="list-style-type: none"> ❖ Cost estimates vary. Tents and Open Campus are affordable options that have been leveraged during the pandemic. 	<ul style="list-style-type: none"> ❖ Enrollment pressure exists now at the high school and is especially taxing on shared spaces (e.g. cafeteria).

<p>Type: Non-Brick and Mortar.</p> <p>Priority 6: Consider alternative locations for sub-separate programs such as ILP3.</p>	<ul style="list-style-type: none"> ❖ Transportation costs may increase, depending on the new site location. Based on current staffing levels, the services provided, and ineligibility for Circuit Breaker claims, a relocation may not result in extraordinary additional costs. 	<ul style="list-style-type: none"> ❖ A comprehensive space mining exercise was completed in January, 2019 (see LHS Space Mining Recommendations January 24, 2019 and meeting presentation from March 8, 2019).
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VIII: FOR FURTHER CONSIDERATION

Land Swaps or Purchase

Another strategy identified by the Advisory Committee members is an active search for new sites for possible future school construction and/or swing space. The Advisory Committee reviewed potential sites for a seventh elementary school or other school facilities should the need eventually arise. Two such sites are the site of the current School Central Office Building in the old Harrington School building and the Laconia St. school site. Neither of these has sufficient area for an elementary school with associated athletic fields and both have other drawbacks so neither is close to being ideal. The Advisory Committee therefore recommends that the Town keep an eye out for properties that could be acquired to serve, if the need arises in the future, as the site for a seventh elementary school or as the location of the School Central Office in case the Old Harrington site needs to be used for school expansion.

The Advisory Committee also discussed land swaps or land acquisition through purchase or eminent domain takings. The Lexington Public Schools currently owns the following sites:

- **Old Harrington School:** located at 146 Maple Street, next to Harrington Elementary School and houses the LPS Central Office staff, as well as the following departments: English Language Learners; Special Education; Curriculum, Instruction, Assessment, and Professional Learning; Human Resources; and Innovation and Instructional Technology.
- **Laconia Street:** This site does not have access from major roads and includes steep topography. It also includes existing walking trails, and it is surrounded by privately owned parcels.
- **173 Bedford Street:** This site was previously occupied by Liberty Mutual and was designed as office space. It was used as a temporary fire station, and is expected to be used as a temporary police station in the future. The previous Town Manager indicated it may be a useful swing space for LPS Central Offices, should the need arise to build another school on the Old Harrington school site.

The Town of Lexington owns multiple other open sites, some of which are substantial in area. Many are in conservation, while others have other types of special status. There also may be some privately owned open areas that are substantial in terms of size. It is not clear that any of these sites would be an appropriate site for a school facility. Nonetheless, the Advisory Committee noted that as long as the possibility that one of these land holdings might be useful as a site for a school facility in the future, it wished to go on record that such possibilities, even if remote, should be kept in mind by town officials.

High Performance Facilities

In October 2019, the Select Board and School Committee (SC) approved the [Integrated Building Design & Construction Policy](#) for all Town funded building projects, including LPS school building projects. The goal of this policy is to “achieve the highest reasonably attainable and economically viable performance standards for health, energy, and resilience.” According to this policy, a high performance facility will build on the LEED standard but with a particular emphasis on:

- Creating a healthy environment, by focusing on indoor air quality and ventilation, minimizing the use of toxics and minimizing burning of fossil fuels onsite.
- Creating an energy efficient, low operating cost structure by (1) optimizing layout to maximize passive energy and maximize onsite renewables, (2) selecting materials and equipment that allow the facilities group to minimize energy use and cost and (3) striving for a net zero facility.
- Maximizing the utility of the buildings, from a resiliency standpoint, taking into account short term weather events (e.g. heat waves, black outs, storms or floods) and expected longer term changes in climate conditions

Hastings School and Lexington Children’s Place were both developed using the performance standards included in the Integrated Building Design & Construction Policy. Per the Integrated Building Design and Construction Policy, any future projects, including a new or renovated high school, will include steps to answer key questions related to the specified building standards. This analysis would inform the design of any new LPS buildings.

Town staff are working on developing similar high performance standards for existing buildings. Once established, the Facilities department will work with a stakeholder group to develop a High Performance Building Operations Policy that will state our objectives and approach to measuring building baseline performance. This subsequent monitoring for adherence to these standards will allow LPS and the Town of Lexington to identify and prioritize gaps to close, integrating any necessary work into the capital planning and maintenance schedules.

Solar and Renewable Energy

The Town of Lexington Department of Public Facilities has negotiated several solar energy Power Purchase Agreements (PPA) to install solar energy systems for nine schools (see Table 6). The projects will provide significant economic and social benefits to the Town of Lexington.

Table 6. Lexington School Solar Energy Systems

School Name	Installation Type	System Size (kWh)	Expected Annual Electricity Production (kWh)	Energy Storage System (kW/kWh)	20-year Savings to Town
Lexington HS	Rooftop	459	532,486		\$1,373,277
Estabrook	Rooftop	133	154,344		\$ 495,382
LCP	Rooftop, Carport	314	373,660	120/240	\$ 645,700
Hastings	Rooftop, Carport	865	1,029,350	250/500	\$ 1,886,923
Bowman	Rooftop, Carport	94 210	109,695 249,900	120/240	\$ 240,824
Clarke	Rooftop, Carport	214 266	248,946 316,540	120/240	\$ 637,489 \$ 549,558
Diamond	Rooftops, Carport	549	653,310	250/500	\$ 550,877
Bridge	Carport	210	249,900	120/240	\$ 165,854
Harrington	Rooftop, Carport	168 266	193,431 316,540	120/240	\$ 620,167 \$ 569,260
Total		3,748	4,428,102	1,100/ 2,200	\$7,735,311

Economic Benefits

The Power Purchase Agreements (PPA) take advantage of various state and federal incentive programs to deliver savings to the Town. The Town is expected to save \$7,735,311 over the 20-year PPA duration. The solar energy systems generate revenue for the Town in the form of electricity savings, PILOT payments paid by the developer, and energy storage (battery) related savings.

Health Benefits

The Lexington Children's Place and Hastings Elementary School are projected to be net-zero energy facilities.

The solar energy systems at the nine schools will produce 4,428,102 kWh of renewable electricity annually. This represents approximately 40% of the Town of Lexington's annual electricity use. This reduction is equivalent to the electricity used by 600 homes and provides \$2.3 million in health benefits from greenhouse gas emission reductions over 20 years.

Additionally, the avoided fossil fuel consumption from these projects will result in a yearly 2,255-ton reduction of CO₂ emissions.

Lexington teachers utilize the solar energy systems as educational tools, including real-time monitoring and dashboards available to students, and for public outreach at school or public events.

IX: NEXT STEPS AND ONGOING REVIEW

To ensure a flexible master planning process, the district will continue reviewing key reports and other information relevant to capital planning decisions and publish a brief update no less than two times a year (January and June). These updates will include critical highlights from data sources relevant to capital planning and described in further detail below, the status of projects underway, and any major adjustments to the district's master planning documents.

Reviews will be facilitated by the Superintendent of Schools, Director of Facilities, the Assistant Superintendent of Finance and Operations, and the Director of Planning and Assessment. We will engage other local bodies and departments, such as the School Committee, the Select Board, the Planning Board, the Appropriation Committee, the Capital Expenditures Committee, Sustainable Lexington, and various school departments (e.g., curriculum, special education). We will engage these stakeholders to gather new information and provide opportunities to weigh in on decisions related to school projects, well in advance of their implementation.

In subsequent reviews, we should consider the following data sources and contacts:

Table 7. Ongoing Review: Data Sources & Primary Contacts

Data Source	Lead Department
Annual review of LPS enrollment & projections	LPS Dir. of Planning & Assessment
Population trends based on Town Census	Town Assessors & Town Clerk
Annual Town and LPS budgets	LPS Assist. Superintendent of Finance and Operations
Anticipated programmatic curricular/pedagogical shifts	LPS Assist. Superintendent of Curriculum & Instruction
Anticipated programmatic changes in special education	LPS Director of Special Education

LPS strategic planning updates	LPS Superintendent of Schools
Mechanical systems review & replacement plan	Director of Public Facilities
General space utilization inventory and facilities update (e.g. major renovations to existing facilities or new construction since last review)	Director of Public Facilities/Building Principals
Housing and development trends (e.g. updated information related to housing inventory, occupancy rates, permits and teardowns, new development, sales, changes to zoning)	Town of Lexington Planning Department
Annual review of Town's land holdings	Town of Lexington Planning Department
Sustainability policies and requirements, including adherence to the Town of Lexington Integrated Building Design & Construction Policy	Director of Sustainability Director of Public Facilities
Updates from Town Comprehensive Plan	Town of Lexington Planning Department
Updates from Town's Capital Plan	Director of Public Facilities

Appendix A: ABOUT OUR PLANNING PROCESS

In the early stages of the master planning process, the overarching vision was focused on achieving consensus on the next “core” or high-priority capital project for the Lexington Public Schools. Initially, the Advisory Committee anticipated a need to focus on additional elementary school spaces, as previous growth has been concentrated at this level; however, updated enrollment data suggested that attention be focused on the secondary level.

The first Advisory Committee meeting was held on September 18, 2018. Members agreed that the current planning effort should be viewed as a continuation of the last round of master planning. The district fully updated its facilities master plan in 2014, with the assistance of Symmes, Maini & McKee Associates (SMMA). Shortly thereafter in February 2015, the Lexington Budget Collaboration Summit (Select Board, School Committee, Appropriation Committee, and Capital Expenditures Committee) published their consensus position, generally referred to as the [“School Building Project Consensus Plan”](#) or “Consensus Plan.” Advisory Members suggested that we reference these previous plans as a reference point and to identify accomplishments.

Over the course of the first few meetings, preferred elements and features of the revised Master Plan were identified. These elements were based on the individual expertise of Advisory Committee members, as well as a review of the prior Master Plan and sample planning documents from other communities. Members agreed the tone should be objective, explicit, transparent, and accessible, and envisioned a plan that would include a thorough problem identification and needs assessment. Information that Advisory Committee members were particularly interested in reviewing included an overall educational vision and programmatic assessment, current space inventory and usage, current facility conditions, specific analysis of special education facilities and needs, analysis of enrollment and potential enrollment drivers, and financial modeling, including predictable maintenance costs.

Advisory Committee members also were interested in understanding the broader community context and vision for the future in terms of, e.g., sustainability goals and major municipal capital projects. They wanted the plan to describe the process used to develop solutions, including details about what information was reviewed and what solutions were considered. With respect to solutions or options, in addition to capital projects to expand facilities, it was agreed that the plan should identify other strategies that can be used to manage growth, such as redistricting or grade reconfigurations. Finally, members agreed the plan should be explicit and clear about intended outcomes and the expected timeline.

The planning process was expected to take into account a wide range of information and options, and Advisory Committee members knew from the outset that some unknowns would remain at the conclusion of the master planning process, e.g., that longer-term enrollment projections are not necessarily accurate, especially because of the possible occurrence of economic downturns and the completion of new housing developments. Therefore, it was

agreed that the plan should include built-in flexibilities. The plan should reasonably anticipate scenarios with lower, higher, and mid-range enrollment growth, while being clear about the parameters and assumptions that were used. Furthermore, following the example of the School Building Project Consensus Plan, the Compendium will be reviewed annually and adjustments will be made as needed.

The Advisory Committee moved onto a series of meetings devoted to a thorough needs assessment, including gathering and reviewing relevant information. With assistance from the Enrollment Advisory Group (EAG), the Advisory Committee closely reviewed available enrollment and projections. Integrating new enrollment information, DiNisco Design conducted and shared the results of an overall space inventory, including planned operating capacities. Building upon information gathered by DiNisco Design, a team of LHS staff and administrators offered additional details on current space challenges, implications given potential future enrollment, and possible solutions. Capitalizing on the expertise and knowledge of Advisory Committee members, the needs assessment was also informed by presentations from other Committee members. For example, the liaison from the Lexington Appropriation Committee, Alan Levine, provided an overview of [financial considerations for capital planning](#). Charles Hornig from the Planning Board provided important overviews of school system history and potential alternate school sites.

With a needs assessment complete, the Advisory Committee participated in a series of collaborative activities designed to surface the most promising solutions. One of the most productive was a grade span analysis of needs, based on enrollment projections and the right-sizing of buildings. Advisory Committee members were divided into what we will refer to as “Grade Span Working Groups” (GSWGs), which were arranged according to master planning considerations for elementary (PK-5), middle (6-8), and high school (9-12). Each of the three GSWGs was asked to (1) answer a series of planning questions; (2) develop a set of grade span-specific recommendations; and (3) identify any missing or superfluous strategies they would not consider and, therefore, should be removed from consideration. An important step in this process was for each grade span group to make a final presentation to the full Advisory Committee with an opportunity to debate recommendations. Grade span working groups then took the feedback from the Advisory Committee and adjusted their recommendations accordingly. DiNisco Designs also weighed in on the recommendations made by the GSWGs, highlighting support for certain ideas or questions pertaining to strategies that they found particularly problematic based on their knowledge of Lexington’s school facilities and the data.

Based on the results from these exercises, the Advisory Committee developed a master list of strategies to consider in the planning process. Eventually, this list was winnowed down to the following strategies for further discussion:

- ☐ flexible school assignment;
- ☐ increases in class size, coupled with increased staffing (e.g. instructional assistants);
- ☐ repurposing non-instructional spaces (e.g. staff offices, conference rooms);
- ☐ repurposing art and music spaces;

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- ❑ repurposing literacy libraries;
 - ❑ the potential relocation of district-wide special education programs (e.g, Fiske to Hastings or Estabrook);
 - ❑ the use of modular additions to existing buildings;
 - ❑ the use of the “Old Harrington,” the current central administrative office building for a 7th elementary school or a 3rd middle school; ;
 - ❑ the purchase of property near existing schools for future expansion (e.g., housing kindergarten in a modified home structure similar to the Lexington Montessori School);
 - ❑ the use of the Laconia Street site for possible central administrative offices or a new school;
 - ❑ grade reconfigurations (e.g., move 6th grade from the middle school to the elementary level or moving Kindergarten or 5th grade to a new location, move 8th grade to the high school);
 - ❑ land-swap opportunities or acquisition of land;
 - ❑ the demolition and replacement of Bridge or Bowman and/or use as swing space;
 - ❑ yearly space-mining exercises to be conducted by building principals in collaboration with school community members.



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